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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/827,435	04/20/2004	Tadao Endo	03500.018084	2723

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EXAMINER

KIKNADZE, IRAKLI

ART UNIT	PAPER NUMBER
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2882

DATE MAILED: 09/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/827,435

Applicant(s)

ENDO, TADAO

Examiner

Irakli Kiknadze

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 7-9 is/are rejected.
- 7) ☒ Claim(s) 5 and 6 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 5/24/2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Japan on April 22, 2003. It is noted, however, that applicant has not filed a certified copy of the 2003-117236 application as required by 35 U.S.C. 119(b).

Claim Objections

2. Claims 5 and 6 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim should refer to other claims in the alternative only and/or cannot depend from any other multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claims 5 and 6 have not been further treated on the merits.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the

applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 8 and 9 are rejected under 35 U.S.C. 102(e) as being anticipated by Zhao et al. (US Patent 6,683,934 B1).

With respect to claims 1, 8 and 9, Zhao teaches (Fig.1) a radiation imaging method and apparatus comprising:

an x-ray source (10); an imaging apparatus including a two-dimensional x-ray detector(30); and image display control means (40) for producing a radiation image of an object (50) detected as the electric signals with the radiation detection means as continuous images including a plurality of frames, the image display control means (40) switching the x-ray source (10) voltage for emitting the radiations between a voltage at a time of producing an odd image and another voltage at a time of producing an even image, the image display control means (40) further controlling a display device (70) to display a processed image as a dynamic image, the processed image being obtained by performing a subtraction process between the odd image and the even image (column 3, lines 1-24 and column 7; lines 1-27).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 3, 4 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhao et al. (US Patent 6,683,934 B1) as applied to claim 1 above, and further in view of Watanabe et al. (US Patent Application Publication 2002/0044141 A1).

With respect to claims 3 and 4, Zhao teaches claimed invention except that the detector comprising a scintillator made from CsI. Watanabe teaches (Fig.7) an x-ray imaging apparatus comprising a radiation detector comprising a scintillator made from CsI ([0045]) and a photoelectric conversion element (6040) using a TFT matrix panel comprising a PIN type sensor using amorphous silicon semiconductor ([0030]) or a MIS type sensor ([0046]). In this arrangement the radiation detector has better picture area enlarging capabilities and has better pixel resolution ([0004]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the radiation detector of Watanabe in the apparatus and method of Zhao, since it would provide better picture area enlarging capabilities and better pixel resolution.

With respect to claim 7, Zhao teaches claimed invention except that the radiation detection elements are made from of lead iodide. Watanabe teaches that the radiation detection elements are made from of lead iodide, a material absorbing the radiations to convert the absorbed radiations into the electric signals directly. In this arrangement, the radiation detector has a reduced signal noise and stores a large amount of charge intended for direct radiation detection ([0059]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the radiation

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detector of Watanabe in the apparatus and method of Zhao, since it would provide a cost-effective radiation imaging with the detector converting the absorbed radiations directly into the electric signals.

Conclusion


7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Irakli Kiknadze whose telephone number is 571-272-2493. The examiner can normally be reached on 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on 571-272-2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Irakli Kiknadze
August 30, 2005

IK


EDWARD J. GLICK
SUPERVISORY PATENT EXAMINER